

Understanding Effective E-Collaboration Through Virtual Distance

Karen Sobel Lojeski

Virtual Distance International, USA

Richard R. Reilly

Stevens Institute of Technology, USA

INTRODUCTION

Virtual distance is a multidimensional perceptual construct resulting from key elements that promote a sense of distance in e-collaborative work environments. Why will virtual distance help to uncover some of the potential downside risks of collaboration using virtual and outsourced resources? Research has shown that the perceived distance between two or more individuals has negative effects on communication and persuasion and promotes a tendency to deceive more than those who do not perceive themselves to be as distant (Bradner & Mark, 2002). Virtual team members and work groups are, by definition, distant from one another, not only in the physical sense but in other ways as well. Socio-emotional factors, for example, can play a role in perceived distance and these factors may contribute to decreased success (Barczak & McDonough, 2003).

The virtual distance model (VDM) was developed after conducting an extensive literature review and combining findings from that effort with executive interview information collected over the course of the first 18 months of this research. The model was tested using a multi-step research method including surveys and follow-up interviews with key executives from a sample of corporations leveraging virtual workspaces.

BACKGROUND

While the notion of distance is, by definition, at the heart of virtual team studies, most of the literature has focused on geographic and temporal factors. Virtual teams (VTs) are those defined as having members that are geographically separate, often with vast distances between one another (Alavi, 1994; Townsend, De-Marie, & Hendrickson, 1998; Majchrzak, Malhotra,

Stamps, & Lipnack, 2004). Therefore, the idea that physical distance plays a role in VT behavior is well established. However, research also shows that other variables can contribute to a sense of socio-emotional or psychological distance. Interpersonal, social, organizational, and technical factors also play a role and have important implications for the attitudes and behavior of team members and their ability to succeed (Bradner & Mark, 2002). These factors can include, but are not limited by, building trust and motivating one another, cultural diversity and lack of goal clarity (Barczak & McDonough, 2003). Collaboration, whether it is face-to-face (FtF) or computer mediated, occurs within a much broader context than simply geographic and temporal dispersion. So there is reason to expand the research beyond physical distance constructs. One of the basic assumptions of this thesis was that the use of geographic and temporal distance constructs alone, are not enough to explain performance differences among teams in the 21st century. Instead, it was posited that the construct of distance for VTs be expanded to include socio-emotional distance factors as well.

As Stephen Roach wrote, "it is time to let go of some of our time-honored relationships" (Roach, 2005). While he was referring to macro-economic relationships, the sentiment applies to micro-economic relationships as well, including virtual teams and globally distanced workforces. A paradigm shift in thinking is required to do so and a new, unifying and parsimonious framework is needed to open up the black box that sits between virtual work and performance outcomes; one that reflects the integrative and multi-dimensional nature of the complex interplay of both real and perceived issues at the individual and group level. The development of such a model was the purpose of this thesis and the resulting model has been named, the virtual distance model (VDM).

The model was developed through a review of the major research streams primarily in management and technology, combined with some central tenants of the theories of distance, social science, and psychology. In addition, an initial set of field studies was conducted, in the form of executive interviews, to ground the theoretical discussion in real-world terms as perceived by leaders at major, global organizations.

FACTORS INFLUENCING DISTANCE

Based on a review of management, information systems and psychological literature, a number of socio-emotional distance factors that influence team members were identified. These include spatial, temporal, technical, organizational and social factors that shape the perceptions of individuals engaged in e-collaborative work. In the present investigation these factors were reviewed in terms of how they collectively impacted work related attitudes, behavior and performance. Eleven factors likely to influence the perceptions of distance between team members are discussed in the following sections (see Figure 1).

Geographic Distance (GD)

Research suggests that physical separation or closeness is of great importance to interactions and that the closer one is physically to another, the greater the chance to form social ties (Latane & Herrou, 1996). Physical distance also impacts the tendency to deceive, ability to influence, the likelihood of cooperation (Bradner & Mark, 2002), and has been shown to have some impact on learning behavior (Latane & Bourgeois, 1996; Bulte & Moenaert, 1998; Arbaugh, 2001; Bradner & Mark, 2002; Coppola, Hiltz, & Rotter, 2002).

Temporal Distance (TD)

Differences in time zones between VT members are often cited as one of the factors that plays a role in VT interactions (Jarvenpaa & Leidner, 1998; Montoya-Weiss, Massey et al., 2002; Massey, Montoya-Weiss et al., 2003). It has also been suggested that TD be considered when structuring organizations (Orlikowski & Yates, 2002), globalizing an organization (Boudreau, Loch et al. 1998), assessing team boundary issues (Espinosa, Cummings et al., 2003) and coordinating VTs (Montoya-Weiss et al., 2002)

Relational Distance (RD)

RD refers to the difference between team members' organizational affiliations. For example, an employee is relationally closer to another employee of the same company than to employee from a third party service provider. RD has been shown to play a key role in social cohesion (Moody & White, 2003), information systems networks, as well as leader effectiveness (Klagge, 1997).

Cultural Distance (CD)

Cultural differences have, to date, been a focus of some research in virtual work and innovation, VTs (Jarvenpaa & Leidner, 1999; Dube & Pare, 2001; Massey, Montoya-Weiss et al., 2001), new product teams (Barczak & McDonough, 2003), risk mitigation (Grabowski & Roberts, 1999), virtual societies (Igbaria, 1999), consensus building using group support systems (Mejias, Shepherd et al., 1997), majority influence (Tan, Wei et al., 1998), software development (Tellioglu & Wagner, 1999) and more. CD has also been used to study foreign investment expansion, entry mode choice, and the performance of foreign invested affiliates, among others (Shenkar, 2001). Following the discussion of social network theory and distance related phenomenon, CD has also been used to interpret network ties amongst managers (Stevenson, 2001). Additionally CD is used to explain how international relationships affect responses and behaviors amongst employees (Thomas & Ravlin, 1995).

Social Distance (SD)

SD has been studied in a number of contexts including class or status differences (Akerlof, 1997), feelings of social closeness and distance based on social interactions in social space (Bottero & Prandy, 2003), as a factor in direct and networked exchanges (Buchan, Croson et al., 2002), as a function of management (Fox, 1977), a dimension of the systematic multiple level observation of groups (SYMLOG) management behavior assessment (Jensen, 1993), as a perceived measure contributing to the concept of leader distance (Antonakis & Atwater, 2002), and as a factor in friendship networks (Krackhardt & Kilduff, 1999). Wiesenfeld and colleagues found that virtual work environments may weaken ties that bind organizations

5 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/understanding-effective-collaboration-through-virtual/12495

Related Content

Disruption and Deception in Crowdsourcing

Agnieszka Onuchowska and Gert-Jan de Vreede (2017). *International Journal of e-Collaboration* (pp. 23-41). www.irma-international.org/article/disruption-and-deception-in-crowdsourcing/215450

Collaborative Learning Through Integrated Feedback Mechanisms in Digital Tools

Nguyen Thien Duyen Ngo and Huy Cuong Pham (2026). *Peer-to-Peer Learning in Online and Hybrid Education* (pp. 161-188). www.irma-international.org/chapter/collaborative-learning-through-integrated-feedback-mechanisms-in-digital-tools/411719

Research on the Implementation of Financial Risk Control Models and Algorithms Based on Machine Learning

Hanwei Fan and Mamdouh Alenezi (2024). *International Journal of e-Collaboration* (pp. 1-16). www.irma-international.org/article/research-on-the-implementation-of-financial-risk-control-models-and-algorithms-based-on-machine-learning/351248

The Vineyard Approach: A Computational Model for Determination of Awareness Foci in E-Mail-Based Collaboration

Adriana S. Vivacqua and Jana Moreirade Souza (2008). *International Journal of e-Collaboration* (pp. 41-59). www.irma-international.org/article/vineyard-approach-computational-model-determination/1970

Public Key Encryption With Equality Test for Industrial Internet of Things Based on Near-Ring

Muthukumar V., Manimozhi I., Praveen Sundar P. V., Karthikeyan T. and Magesh Gopu (2021). *International Journal of e-Collaboration* (pp. 25-45). www.irma-international.org/article/public-key-encryption-with-equality-test-for-industrial-internet-of-things-based-on-near-ring/278837